

POTASSIUM STRATEGIES FOR THE WHEAT LUPIN ROTATION

FARMER: Simkin

LOCATION: Binnu

YEAR: 2013 **CODE:** K11W1

AIM: To determine the optimum potassium (K) fertiliser strategy for the wheat lupin rotation.

PADDOCK HISTORY: CSBP trial established 2011. 2011: wheat; 2012: lupins.

2012 SOIL ANALYSIS:

Depth (cm)	pH	EC	OC	P	PBI	K	S	Ex Ca	Ex Mg	Ex K	Ex Na	eCEC	Al
0-10	5.7	0.04	0.3	12	7	17	4	1.2	0.18	0.04	0.04	1	0
10-20	4.6	0.02	0.2	11	9	16	2	0.3	0.06	0.04	0.02	1	2
20-30	4.5	0.01	0.1	8	10	18	2	0.2	0.05	0.04	0.01	1	4
30-40	4.6	0.01	0.1	2	10	22	2	0.2	0.06	0.05	0.01	1	3
50-60	5.0	0.01	0.1	2	13	20	4	0.3	0.05	0.05	0.01	1	0
90-100	5.5	0.01	0.1	2	13	22	5	0.4	0.06	0.06	0.01	1	0

TREATMENTS:

Trt	2011 Wheat			2012 Lupins	2013 Wheat			Total K (kg/ha)
	IBS (kg/ha)	Band (L/ha)	Band (kg/ha)	IBS (kg/ha)	IBS (kg/ha)	Band (L/ha)	Band (kg/ha)	
1	-	-	-	-	-	-	-	0
2	-	30 FN	94 Agstar	-	-	30 FN	94 Agstar	0
3	-	35 FN	110 K-Till	-	-	35 FN	110 K-Till	36
4	-	35 FN	110 K-Till	25 MoP	-	35 FN	110 K-Till	49
5	50 MoP	30 FN	94 Agstar	-	50 MoP	30 FN	94 Agstar	75
6	100 MoP	30 FN	94 Agstar	-	100 MoP	30 FN	94 Agstar	99

MANAGEMENT:

Seeding: 7 May 65 kg/ha Mace

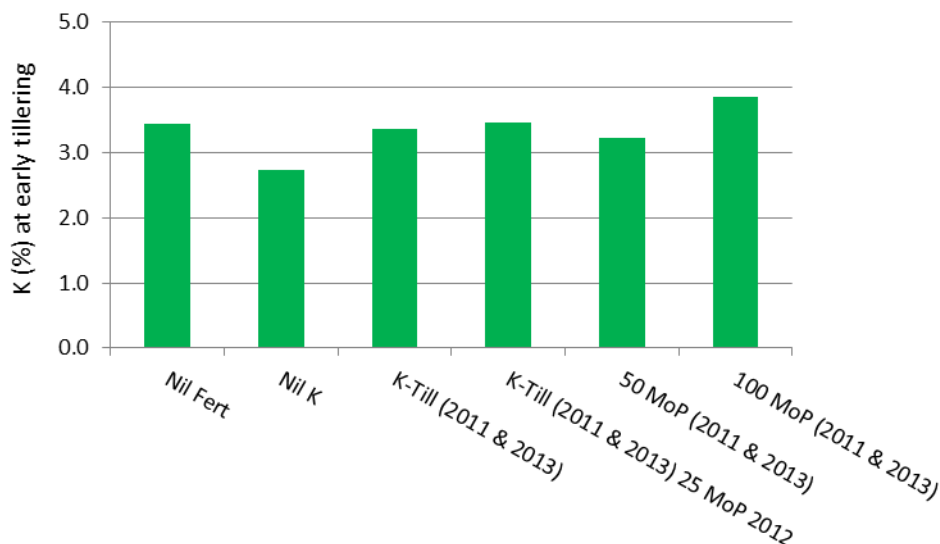
Pesticides: 7 May 2 L/ha Boxer Gold, 1 L/ha Treflan and 300 ml/ha Lorsban
4 Jun Jaguar/Lontrel/Ally

Harvest: 7 Nov

RESULTS AND DISCUSSION:

For the third year in a row, small visual growth responses to potassium (K) were not realised in yield.

2013 plant tests showed that K was marginal (2.5 – 3.0% K) without K applied but not as deficient as indicated by soil tests:



Plant tests are known to be a more accurate guide to K requirements.

2013 wheat yields (<0.8 t/ha) were limited by very dry growing conditions. K had no effect on grain quality (protein about 13%, hectolitre weights 79 kg/hl and screenings 1%).

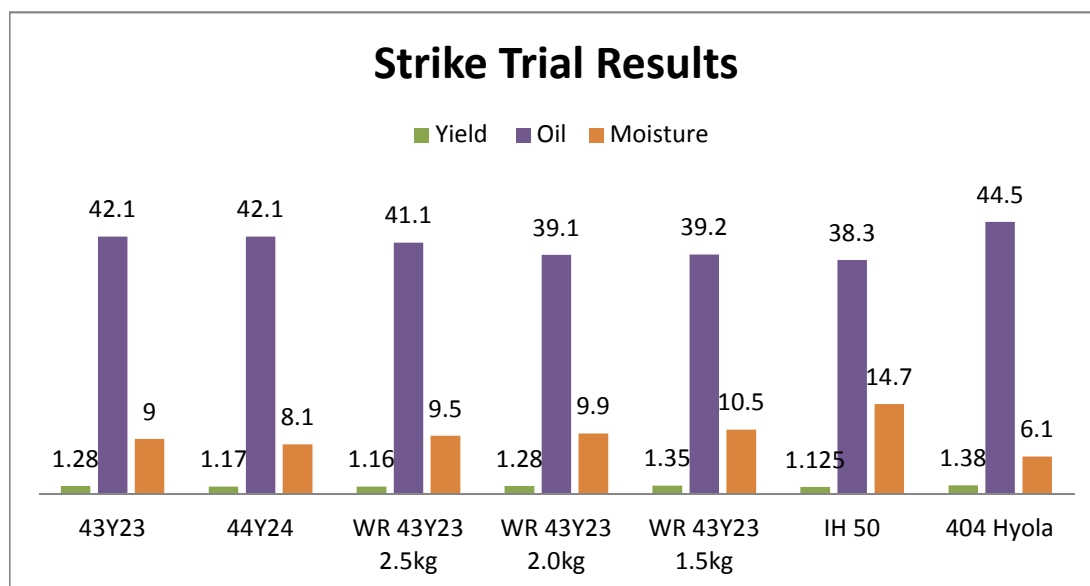
Water repellence and/or sub soil compaction may be limiting yield potential and therefore the requirement for K fertiliser.

Trt	2011 Wheat				2012 Lupins		2013 Wheat			2013
	IBS (kg/ha)	Band (L/ha)	Band (kg/ha)	Yield (t/ha)	IBS (kg/ha)	Yield (t/ha)	IBS (kg/ha)	Band (L/ha)	Band (kg/ha)	Yield (t/ha)
1	-	-	-	0.90	-	0.94	-	-	-	0.62
2	-	30 FN	94 Agstar	2.28	-	0.98	-	30 FN	94 Agstar	0.75
3	-	35 FN	110 K-Till	2.37	-	1.01	-	35 FN	110 K-Till	0.73
4	-	35 FN	110 K-Till	2.29	25 MoP	1.04	-	35 FN	110 K-Till	0.79
5	50 MoP	30 FN	94 Agstar	2.38	-	0.95	50 MoP	30 FN	94 Agstar	0.77
6	100 MoP	30 FN	94 Agstar	2.39	-	1.05	100 MoP	30 FN	94 Agstar	0.73
			Prob	0.34		0.59				0.34
			Lsd	ns		ns				ns

KEY MESSAGE:

Plant testing should be used as a guide to better K fertiliser decisions.

Variety	Yield	Oil	Moisture	Seed Rate Kg/Ha
43Y23	1.28	42.1	9	3
44Y24	1.17	42.1	8.1	3
WR 43Y23 2.5kg	1.16	41.1	9.5	2.5
WR 43Y23 2.0kg	1.28	39.1	9.9	2
WR 43Y23 1.5kg	1.35	39.2	10.5	1.5
IH 50	1.125	38.3	14.7	3
404 Hyola	1.38	44.5	6.1	3



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